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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the specific legal requirements and detailed technical rationale that serve as the basis for the requirements of this Order.

Scope of Permit. This renewed Order regulates the discharge of up to 18.6 million gallons per day (mgd), of groundwater seepage and stormwater from Oakwood Lake. This Order includes effluent and surface water limitations, monitoring and reporting requirements, additional study requirements, and reopener provisions for effluent constituents.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

WDID	5B392082001
Discharger	Oakwood Lake Water District and Beck Properties
Name of Facility	Oakwood Lake Subdivision Mining Reclamation Project, Manteca
Facility Address	874 East Woodward Avenue
	Manteca, CA 95337
	San Joaquin County
Facility Contact, Title and Phone	Mike Gilton, District Engineer, (209) 652-5351
Authorized Person to Sign and Submit Reports	Nicole Tutt, District Attorney, (415) 438-7251
Mailing Address	Oakwood Lake Water District, P.O. Box 240, Salida, CA 95368
Billing Address	Same as Mailing Address
Type of Facility	Reclaimed Sand Mine, SIC Code: 1442
Threat to Water Quality	2
Complexity	C
Pretreatment Program	NA
Reclamation Requirements	NA
Facility Permitted Flow	18.6 million gallons per day (mgd)
Facility Design Flow	NA
Watershed	San Joaquin Delta Hydrologic Unit
Receiving Water	San Joaquin River/Sacramento San Joaquin Delta
Receiving Water Type	Tidally Influenced River

- A. Oakwood Lake Water District is the owner and operator of the Oakwood Lake Subdivision Mining Reclamation Project, a residential development. Beck Properties, Inc. owns the property at 874 E. Woodward Avenue, Manteca, on which the Facility is located. Together Oakwood Lake Water District and Beck Properties, Inc. are hereinafter referred to as the Discharger. Oakwood Lake Water District is responsible for maintaining compliance with this Order. Beck Properties, Inc. is not responsible for the Facility's operations or the discharge to surface waters. However, Beck Properties, Inc. is ultimately responsible if enforcement actions against Oakwood Lake Water District are ineffective or would be futile, or if enforcement is necessary to protect public health or the environment.
- B. The Facility discharges groundwater seepage and stormwater to the San Joaquin River within the boundary of the Sacramento San Joaquin Delta, a water of the United States and is currently regulated by Order No. 98-123 which was adopted on June 5, 1998 and expired on June 5, 2003. The terms of Order No. 98-123 automatically continued in effect after the permit expiration date.

- C. Brown Sand, Inc. historically operated an aggregate sand excavation at this location, and Oakwood Lake was formed as a result of mining sand from the site. The sand excavation began in 1969, and included dewatering of excavation areas, including Oakwood Lake, with subsequent discharge of this water to the San Joaquin River. Mine dewatering of excavation areas was necessary to mine raw sand product for processing. Active mining areas were separated from previously mined areas by berms. Active mining areas were dewatered to elevations averaging -33 feet mean sea level (msl) by pumping groundwater to Oakwood Lake. Oakwood Lake was then pumped to the San Joaquin River to maintain a water level of approximately -15 feet msl.

In addition to the sand excavation and mining, an affiliated company, Oakwood Lake Inc., operated a concurrent reclamation plan which included a waterpark, campground, commercial areas, and mobile home park.

In June 2000, Brown Sand, Inc. submitted an Interim Management Plan (IMP) for the site to San Joaquin County, for maintenance of the property in "Idle Mine" status in compliance with Section 2770(h) of the Surface Mining and Reclamation Act of 1975 (SMARA). Brown Sand, Inc. submitted a new RWD notifying the Regional Board of the operational change to "Idle Mine" status on January 5, 2001. The notification stated that Brown Sand, Inc. property continues to hold significant reserves, which are estimated to be in excess of two million cubic yards, and that mining could resume in the future.

In January 2001, the San Joaquin County Board of Supervisors approved the Final Environmental Impact Report (EIR) for the final reclamation of the remaining portions of the Brown Sand, Inc. mining property as a Residential Housing Development. This approval also allowed the continued operation and expansion of the waterpark, campground, and mobile home park.

A revised Report of Waste Discharge (RWD) and application for a NPDES permit renewal to discharge up to 18.6 mgd of groundwater seepage and stormwater from the Oakwood Lake Subdivision Mining Reclamation Project (Facility) was initially submitted on June 5, 2002.

In September 2004 the Oakwood Lake Resort and Manteca Waterslide Park were closed and preparations began on the new phase of residential and commercial development. The current reclamation design involves residential subdivision construction beginning at an elevation of +12 feet msl. The residential subdivision at Oakwood Lake will include approximately 500 residential units and commercial development. The existing sewage treatment plant will be expanded from 81,000 gallons per day (gpd) to an estimated 170,000 gpd to accommodate the existing mobile home park uses and new residences at full development. Calculations provided by the Discharger indicate the travel time for groundwater to reach Oakwood Lake from the area underlying the percolation basins will be approximately six months. The new use also introduces new stormwater flows from residential and commercial development surrounding Oakwood Lake.

Oakwood Lake Water District (OLWD) is the governmental entity charged with providing water and sewer services to the new development, and Beck Properties, Inc. is the owner of land to be developed within OLWD. The Discharger submitted a revised RWD and notice of change in ownership and operation on March 15, 2005.

The RWD submitted by the Discharger indicated that the water level in Oakwood Lake will likely rise to approximately +5 feet msl without pumping of groundwater from Oakwood Lake. The Discharger has indicated that most of the housing and commercial development will be constructed on lands reclaimed on approximately +12 feet msl. The Discharger has stated that under the current design, continual dewatering will eventually cease, and Oakwood Lake will have no discharge to the San Joaquin River except under a catastrophic condition (flood/wet season).

On 28 April 2005, the Regional Board requested additional information regarding the precipitation return frequency in which Oakwood Lake would discharge to surface waters given the new residential and commercial development. A companion Time Schedule Order provides a time schedule for the Discharger to either comply with the final effluent limitations of this Order, or provide the water balance

information which demonstrates containment of Oakwood Lake water for rainfall periods to the 100 year return period with the annual total distributed monthly in accordance with mean monthly precipitation patterns. If the Discharger successfully demonstrates containment of Oakwood Lake water under these conditions, this Order may be rescinded.

II. FACILITY DESCRIPTION

The Discharger pumps groundwater seepage and stormwater from Oakwood Lake to the San Joaquin River to prevent portions of the Facility, located below the pre-mining water table from being flooded. At build-out, scheduled for 2006, the Facility will include over 500 residential units and commercial development.

A. Description of Wastewater Treatment or Controls

1. The discharge consists of groundwater seepage and stormwater collected in Oakwood Lake. There are no treatment operations at the Facility. The discharge is currently pumped from Oakwood Lake to maintain the lake level at minus 15 feet mean sea level (msl).

B. Discharge Points and Receiving Waters

1. The Facility is located within Sections 2, 3, 10, and 11, T2S, R6E, MDB&M; Assessor's Parcel Numbers (APNs) 241-030-09&10 and 241-040-14&15; and at 37°46',45" N, Latitude and 121°17',36" W, Longitude, as shown on Attachment A, a part of this Order.
2. The Discharger discharges up to 18.6 mgd from Oakwood Lake to the San Joaquin River within the San Joaquin Delta Hydrologic Unit (Discharge 001). Discharge 001 is located at a point approximately 0.5 miles south of the crossing of Interstate 5 over the San Joaquin River at Mossdale, within APNs 241-410-33 and 241-030-09; and at 37°46',50" N, Latitude and 121°17',50" W, Longitude.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the existing Order for discharges from Discharge 001 (Monitoring Location E-001) and representative monitoring data from the term of the previous Order are as follows:

Parameter (units)	Effluent Limitations			Monitoring Data (January 2001–December 2004)		
	Average Monthly	Average Weekly	Maximum Daily	Minimum Daily Discharge	Maximum Daily Discharge	Long Term Average Discharge
Flow (mgd)	--	--	18.6	--	15.3	6.2
Total Suspended Solids (mg/L)	20	30	50	56	56	--
Settleable Solids (ml/L)	0.5	--	1.0	--	--	--
Turbidity (NTU)	15	20	25	0.4	60	6.4
Chlorine, Total Residual (mg/L)	--	--	0.02	<0.005	0.2	0.1
pH (s.u.)	--	--	6.5-8.5 ^a	6.5	9.0	--

a. Instantaneous minimum-maximum range.

2. The Report of Waste Discharge describes the Oakwood Lake discharge as follows:

<u>Parameter</u>	<u>Value</u>	<u>Units</u>
Long Term Average Daily Flow Rate:	5.57	Mgd
Maximum Daily Flow Rate:	18.6	Mgd

Maximum Temperature, Summer:	28.4	°C
Minimum Temperature, Winter:	4.6	°C
pH (min-max):	6.5-9.2	s.u.
Long Term Average COD:	11.4	mg/L
Maximum COD:	40	mg/L
BOD ₅ ^a	<5	mg/L
Ammonia as N	<0.5	mg/L
Total Organic Carbon	6.7	mg/L
Total Suspended Solids:	56	mg/L

a. 5-day BOD at 20 °C.

D. Compliance Summary

- During the monitoring period of January 2001-December 2004 the Discharger violated the following effluent limitations established by previous Order No. 98-123:

Parameter (units)	Effluent Limitations			Number of Exceedances		
	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Total Suspended Solids (mg/L)	20	30	50	1	1	1
Turbidity (NTU)	15	20	25	4	5	3
Chlorine, Total Residual (mg/L)	--	--	0.02	--	--	2
pH (s.u.)	--	--	6.5-8.5 ^a	--	--	13 ^b

a. Instantaneous minimum-maximum range.

b. Based on instantaneous measurements. All 13 exceedances were greater than 8.5 s.u., while none violated the lower limit of 6.5 s.u.

- Review of receiving water monitoring data during the period of January 2001-December 2004 suggests that the discharge may be causing or contributing to the exceedance of receiving water limitations for pH and turbidity prescribed by previous Order No. 98-123. A summary of the limitations and instances follows:
 - Receiving Water Limitation: *Turbidity to increase more than 10 percent over background levels.* Number of instances where the results of downstream monitoring for turbidity exceeded the upstream by more than 10 percent: 22.
 - Receiving Water Limitation: *The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.* Number of instances where the results of downstream monitoring for pH changed by greater than 0.5 units compared with upstream monitoring: 8.

E. Planned Changes

During the final phase of reclamation, the Discharger plans to allow Oakwood Lake's water level to reach historic groundwater levels, maintain a minimum 2 feet of freeboard to ground surface elevations, contain all source water flows (i.e. groundwater seepage and stormwater runoff) and completely cease all discharges to the San Joaquin River. As noted previously, Regional Board staff requested additional information regarding the precipitation return frequency in which Oakwood Lake would discharge to surface waters given the new residential and commercial development. A companion Time Schedule Order provides a time schedule for the Discharger to either comply with the final effluent limitations of this Order, or provide the water balance information which demonstrates containment of Oakwood Lake water for rainfall periods to the 100 year return period with the annual total distributed monthly in accordance with mean monthly precipitation patterns. If the Discharger successfully demonstrates containment of Oakwood Lake water under these conditions, this Order may be rescinded.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

1. The action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.
2. The San Joaquin County Planning Department has adopted a final environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) for the mine reclamation project.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to the Sacramento San Joaquin Delta (Delta) are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Sacramento San Joaquin Delta	<u>Existing:</u> Municipal and Domestic (MUN); Irrigation and Stock Watering (AGR); Industrial Process Supply (PRO); Industrial Service Supply (IND); Contact Recreation (REC-1); Non-contact Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm and Cold Migration of Aquatic Organisms (MIGR); Warm Water Spawning, Reproduction, and/or Early Development (SPWN); Wildlife Habitat (WILD); and Navigation (NAV).

2. **Thermal Plan.** The State Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on

May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

4. **State Implementation Policy.** On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.
5. **Anti-degradation Policy.** The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
6. **Anti-Backsliding Requirements.** This Order does not relax any effluent limitations or monitoring requirements set by previous Order No. 98-123, and therefore is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Any impact on existing water quality will be insignificant.
7. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires all NPDES permits to specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.
8. **Stormwater Requirements.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from mining reclamation projects where there is residual material exposed to stormwater. Stormwater requirements are only applicable to the run off of stormwater in contact with reclaimed mine wastes. Stormwater commingled with open pit mine water, which is a combination of groundwater and stormwater, for the purposes of this Order, are not subject to stormwater requirements.
9. On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under USEPA's new regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
10. **Restrictions no More Stringent than Federal Law.** This Order contains restrictions on individual pollutants that are no more stringent than required by the federal Clean Water Act. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on total suspended solids (TSS), settleable solids, and turbidity. Restrictions on TSS, settleable solids, and turbidity are specified in federal regulations as discussed in Finding F, and the permit's technology-based pollutant restrictions are no more stringent than required by the Clean Water Act. Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on

May 1, 2001. Beneficial uses and water quality objectives contained in the Basin Plan which were applied in the development of water quality-based effluent limitations were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the [Clean Water] Act” pursuant to 40 CFR 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the Clean Water Act.

D. Impaired Water Bodies on CWA 303(d) List

1. The federal Clean Water Act (CWA) Section 303(d) addresses waters that have not attained the CWA national goal of “fishable, swimmable” by requiring states to identify these impaired water bodies and develop total maximum daily loads (TMDLs) for them, with oversight from USEPA. A TMDL is a quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect bodies of water.
2. On February 4, 2003, the State Board adopted the 2002 California 303(d) list of impaired water bodies. The listing for the eastern portion of the Delta waterways includes the organo-phosphate pesticides (diazinon and chlorpyrifos), organo-chlorine Group A pesticides (including the organo-chlorine pesticides DDT, endrin aldehyde, and lindane), mercury, and unknown toxicity. The listing for the San Joaquin River downstream of the discharge also includes organic enrichment/Low dissolved oxygen. These listings require review and assessment of effluent quality to determine if applicable effluent limitations are necessary. The USEPA requires the Regional Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant.
3. Regional Board staff is currently in the process of developing TMDLs for some of the 303(d) listed constituents for the Delta waterways. When completed, the TMDLs will allocate waste loads to the various dischargers within the appropriate watersheds. This Order contains effluent limits necessary to protect the beneficial uses of the receiving waters until such time as TMDLs are completed for all constituents of concern on the 303(d) list and loads can be allocated. A Provision of this Order contains a reopener to modify and/or include effluent limits as necessary when load allocations for any 303(d) listed constituents are implemented.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The federal Clean Water Act (CWA) mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law. (33 U.S.C., 1311(b)(1)(C); 40 CFR, 122.44(d)(1)) NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*” Federal Regulations, 40 CFR, Section 122.44(d)(1)(vi), further provide that “[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”

40 CFR section 122.44(d)(1)(vi)(A) specifically allows the state to establish effluent limitations using an explicit state policy interpreting its narrative objectives. The Regional Board's Basin Plan contains an explicit state policy that interprets its narrative objectives. The Regional Board's Basin Plan, page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives") that specifies that the Regional Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*" This Policy complies with 40 CFR 122.44(d)(1).

40 CFR section 122.44(d)(1)(vi) requires permit writers to use one of three mechanisms to implement its narrative water quality objectives and translate relevant narrative criteria into chemical-specific effluent limitations. With respect to narrative objectives, the Regional Board must establish effluent limitations using one or more of three specified sources, including EPA's published water quality criteria, a proposed state criterion (*i.e.*, water quality objective), or an explicit state policy interpreting its narrative water quality criteria (*i.e.*, the Regional Board's "Policy for Application of Water Quality Objectives")(40 CFR 122.44(d)(1) (vi) (A), (B) or (C)).

The Basin Plan contains a narrative toxicity objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*". The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The beneficial uses include municipal and domestic supply, agricultural irrigation supply, industrial process and service supply, water contact and non-contact recreation, aquatic habitat, migration, spawning, wildlife habitat and navigation. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Board may apply limits more stringent than MCLs.

When a reasonable potential exists for exceeding a narrative objective, federal regulations mandate numerical effluent limitations. 40 CFR section 122.44(d) allows permit writers to put in place new chemical-specific limitations through interpretation of existing narrative criteria. 40 CFR section 122.44(d) has been incorporated by reference into the state's regulations, and thus a translator for establishing chemical-specific limitations through interpretation of existing narrative criteria in section 122.44(d) is a part of the state's regulations.

The Regional Board has considered the factors specified in CWC Section 13263, including considering the provisions of CWC Section 13241 where appropriate. The Regional Board is not required to consider the factors in CWC Section 13241 in applying existing water quality objectives, including adopting new effluent limitations in this Order.

The Regional Board must implement the CWC consistent with the CWA. The CWA precludes the consideration of costs when developing effluent limitations for NPDES permits necessary to implement water quality standards (See *Ackels v. EPA* (9th Cir. 1993) 7 F.3d 862, 865-66). The Regional Board may consider costs in developing compliance schedules. The Regional Board finds, on balance, that these requirements are necessary to protect the beneficial uses of the Delta.

A. Discharge Prohibitions

The discharge prohibitions in this Order are necessary to assure that the discharge occurs as described in Findings of this Order, is consistent with the requirements of the California Water Code, and other State and federal requirements.

B. Technology-Based Effluent Limitations

1. Scope and Authority

As specified in 40 CFR 122.44 (a)(1), technology-based effluent limitations shall be applied when applicable based on: effluent limitations and standards promulgated under section 301 of the CWA, or new source performance standards promulgated under section 306 of CWA, on case-by-case effluent limitations determined under section 402(a)(1) of CWA, or a combination of the three, in accordance with 40 CFR 125.3.

2. Applicable Technology-Based Effluent Limitations

Previous Order No. 98-123 established effluent limitations for total suspended solids (TSS), settleable solids, and turbidity, which are technology-based effluent limitations (TBELs) for settling ponds, developed using best professional judgment. This Order carries over the TBELs established by the previous Order with the exception of mass-based effluent limitations for TSS. Previous Order No. 98-123 did not establish mass-based effluent limitations for TSS. This Order establishes mass-based effluent limitations for TSS using the maximum permitted flowrate of 18.6 mgd.

TSS, settleable solids, and turbidity limitations are existing limitations, carried over from previous Order No 98-123, and do not meet the criteria for exemption from mandatory minimum penalties.

Table F-1.
Summary of Technology-based Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	20	30	50	--	--
	lbs/day ¹	3100	4600	7800	--	--
Settleable Solids	ml/L	0.5	--	1.0	--	--
Turbidity	NTU	15	20	25	--	--

1. Based upon the maximum permitted flowrate of 18.6 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Dilution, Receiving Water Characteristics/Available Flow Data

- i. The Discharger utilizes a side-bank outfall on the eastern bank of the San Joaquin River. Much of the following information was developed during the NPDES permit renewal process for the City of Manteca Wastewater Quality Control Facility (WQCF), which discharges approximately 4.89 mgd of treated domestic and industrial wastewater just 50 feet upstream via a side-bank outfall on the eastern bank (Manteca outfall).
- ii. Flow in the San Joaquin River can be estimated from the Vernalis gaging station which is approximately 15 miles upstream from the outfall. There are agricultural diversions and returns between the Vernalis station and the Discharger's outfall, which affect flow and water quality. The San Joaquin River in the vicinity of the discharge is near the upper limits of the Delta tidal influence. This portion of the Delta is listed as impaired for numerous pollutants, including unknown toxicity as noted above.

The California Department of Water Resources (DWR) collects daily average flow data for the San Joaquin River near Vernalis at station RSAN112. Evaluation of this data for the period 1980 to 2002 provided a 1Q10 value of 567 cfs, a 7Q10 value of 620 cfs, and a 30Q10 value of 680 cfs. This period was selected because all current flow control structures on the San Joaquin River and its tributaries were in place by 1980. However, the data set may not accurately represent historical critical low flow periods. Stage data collected at the Vernalis station did not indicate any tidal influence that far upstream. Downstream, DWR collects stage data near Mossdale at station RSAN087, near the Manteca outfall. Stage data fluctuated about 0.5 feet daily implying that tidal influence is present.

Under critical low flow conditions, upstream flows occur on the flood tide, no flow during the slack tide, and downstream flows during the ebb tide. Multiple dosing of the receiving water with effluent may occur as the tide moves the water column upstream and downstream past the outfall.

iii. Available Hydrodynamic/Water Quality Models

Hydrodynamic and water quality models were utilized for the analysis of the water quality impacts of the proposed expansion of the City of Manteca wastewater discharge to the San Joaquin River. Resource Management Associates (RMA) performed the modeling that was published in the *Analysis of the Fate and Water Quality Impacts of the City of Manteca Discharge*, Resource Management Associates, October 10, 2000. Larry Walker Associates utilized the modeling data developed by RMA to generate the *Water Quality Analysis of Surface Water Discharge*, Larry Walker Associates, October 2000. Both of these

documents are included in the appendices of the *Draft Environmental Impact Report for the Manteca WQCF Phase III/IV Expansion Project, October 2000* (Manteca EIR). The near-field analysis was performed using the RMA-10 model which performed the hydrodynamic simulation and the temperature and ammonia evaluations. The near-field analysis was based on the assumptions that::

- a. Minimum daily flows in the San Joaquin River at Vernalis since 1983 were used.
- b. Discharge to the river would be only during the out-going tide.
- c. Ambient water conditions for temperature and ammonia were based on the DWR-D-1485 site at Mossdale.

The far-field water quality analysis was performed using a link-node hydrodynamic model of the San Joaquin River and Delta. The link-node tidally averaged water quality model simulates the long-term fate and transport of a discharge to the Delta. A total of three Delta configurations were considered for the parameters of dissolved oxygen, total organic carbon, and total dissolved solids. A tracer simulation was utilized to determine the potential influence of the treated Manteca WQCF effluent on downstream intakes. The model predicts very small changes to downstream locations as a result of the discharge.

The Manteca EIR concluded that the small changes were insignificant. The Manteca EIR did not evaluate the cumulative impacts of the Manteca and Oakwood Lake Subdivision Mining Reclamation Project discharges. There were concerns about the accuracy of the modeling, including the lack of a demonstrated calibration of the near-field RMA-10 modeling. Without comparison to field data (e.g. dye or temperature), there is no assurance that plume dimensions or in-stream dilutions were accurate for the Manteca discharge. Dilution and plume dimensions were not determined for the City of Manteca WQCF under critical conditions, and the timed discharge modeling did not appear to be run for an adequate time period to allow the tidal cycles and their recirculation effects to be fully accounted for in the plume development. The Oakwood Lake Subdivision Mining Reclamation Project discharge was not taken into account to determine its effects on plume development.

iv. Regulatory Guidance for Dilution Credits and Mixing Zones

The Clean Water Act directs states to adopt water quality standards to protect the quality of their waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR 122.44 and 122.45). The USEPA allows states to have broad flexibility in designing their mixing zone policies. Primary guidance on determining mixing zone and dilution credits is provided by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP), the *USEPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)* (TSD), and the Basin Plan. For NPDES permits in California, the SIP guidance supersedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies.

The allowance of mixing zones by the Regional Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will*

consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the TSD. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge."

Section 1.4.2 of the SIP states that, "with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by the Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board."

Section 1.4.2.1 of the SIP defines a dilution credit as, "a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations. Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some or no priority pollutants in a discharge."

In allowing mixing zones for constituents governed by the SIP, a mixing zone shall be as small as practicable and shall not:

- Compromise the integrity of the entire water body;
- Cause acutely toxic conditions to aquatic life passing through the mixing zone;
- Restrict the passage of aquatic life;
- Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;
- Produce undesirable or nuisance aquatic life;
- Result in floating debris, oil, or scum;
- Produce objectionable color, odor, taste, or turbidity;
- Cause objectionable bottom deposits;
- Cause nuisance;
- Dominate the receiving water body or overlap a mixing zone from different outfalls; or
- Be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (SWRCB Resolution No. 88-63), this SIP supersedes the provisions of that policy.

v. Assimilative Capacity Granted to the City of Manteca

Regional Board Order No. R5-2005-0028 did not grant the City of Manteca WQCF a mixing zone for acute criteria for the following reasons:

- In the immediate vicinity of the outfall, little dilution is available for the side-bank discharge due to limited mixing;
- Close proximity to the Oakwood Lake Subdivision Mining Reclamation Project discharge (immediately downstream, within 50 feet);
- The 1-hour exposure interval that the acute criteria are intended to protect; and
- The periods of slack tide that can occur at low river flows.

Regional Board Order No. R5-2004-0028 granted a chronic aquatic criteria mixing zone with 4:1 dilution for the City of Manteca WQCF. The mixing zone is restricted to the

surface layer of the water column in a plume hugging the eastern shore of the river and extending 450 feet downstream of the outfall.

Human health-based criteria that are based on safe-exposure levels for lifetime exposure (e.g., cancer risk estimates) utilize the harmonic mean flow to represent the receiving water flow. A steady state analysis utilizing the harmonic mean flow at Vernalis provides a dilution of 222:1 for the City of Manteca WQCF.

vi. Remaining Assimilative Capacity

San Joaquin River flow monitoring at the Vernalis gauging station and the dilution study conducted for the City of Manteca WQCF indicate that there may be remaining assimilative capacity for the Facility's discharge. Also, considering that the dewatering discharge will occur mainly during the wet-season, when the river's flow is higher, additional assimilative capacity may exist. As discussed above, the City of Manteca's dilution study did not account for the Facility's discharge, which is within the City of Manteca's chronic mixing zone. Considering the close proximity of the discharges; the lack of information regarding the potential impacts of the Facility's discharge on the City of Manteca WQCF's established mixing zone; the applicable SIP guidance for mixing zones requiring that mixing zones not overlap each other; and the lack of information regarding the characteristics of the resultant mixing zone (i.e. the mixing zone created by the combination of the two distinct discharges), the Regional Board has evaluated the need for water quality-based effluent limitations for pollutants without benefit of dilution in this Order. These water quality-based effluent limitations are based on the application of water quality criteria or objectives at the point of discharge. The Discharger may elect to conduct a dilution study to evaluate the remaining assimilative capacity. If requested, the Regional Board will review such studies and if warranted, may reopen this permit to make appropriate changes.

b. Receiving Water Hardness

Acute and chronic criteria for certain inorganic priority pollutants are dependent on the hardness of the receiving water. In general, lower hardness values provide more stringent criteria. The hardness value expected to occur at the point in the receiving water where the standard applies is considered the design hardness. San Joaquin River hardness data is available at Vernalis, Mossdale, and at the Discharger's Receiving Water Monitoring Station R-001. There is more river hardness data available over a longer period at Vernalis, therefore, the Vernalis data were used to evaluate receiving water hardness. In determining the design hardness, the Regional Board analyzed the receiving water hardness measured at Vernalis during periods when critical low flow was probable (i.e. San Joaquin River flow at Vernalis ranging from 800 cfs to 1,200 cfs).

Receiving water hardness is generally flow-related with lower flows providing higher hardness values. To determine the design hardness, receiving water hardness and flow data collected from the USGS monitoring station at Vernalis from 1950 through 1999 were evaluated. The dataset was filtered for hardness under design flow conditions. The minimum flow at Vernalis is approximately 1000 cfs which is the flow that the U.S. Bureau of Reclamation maintains at Vernalis to meet the 1995 Water Quality Control Plan salinity objective of 1000 $\mu\text{mhos/cm}$. Hardness data was then evaluated in the range of 800 to 1,200 cfs. The receiving water hardness generally ranged from 150 to 250 mg/L as CaCO_3 with the lowest observed receiving water hardness under these conditions being 108 mg/L CaCO_3 . The lowest observed receiving water hardness of 108 mg/L was used to develop WQBELs in this Order.

c. Receiving Water pH and Temperature

The Basin Plan maximum permitted receiving water pH of 8.5, and maximum observed summer (June 1 – September 30) and winter (October 1 – May 31) receiving water temperatures at the Discharger's Receiving Water Monitoring Station R-001 for the period of

January 2000—December 2004 were used to develop pH, and/or temperature dependent WQBELs. These worst-case values have been chosen to protect the beneficial uses of the receiving water and are summarized below:

pH	8.5 s.u.
Warm Weather Maximum Temperature June 1 – September 30	78 °F
Cool Weather Maximum Temperature ¹ October 1 – May 31	69 °F

1. A maximum winter temperature of 82 °F was recorded in October 2004. This data point was disregarded because it is inconsistent with the other data points collected at R-001 for the specified winter period.

3. Determining the Need for WQBELs

- a. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, ammonia, antimony, arsenic, barium, total residual chlorine, copper, conductivity, iron, and manganese. Effluent limitations for these pollutants are included in this Order. The reasonable potential analysis for these pollutants and development of effluent limitations is described in paragraphs b. through v. below.

PRIORITY POLLUTANTS

- b. For Priority Pollutants a Reasonable Potential Analysis (RPA) was conducted in accordance with either the SIP or the TSD. The USEPA adopted the NTR and the CTR, which contains water quality standards applicable to this discharge and the SIP contains guidance on implementation of the NTR and CTR. As noted in Section 1.1 of the SIP, "Designated beneficial uses to which (federal) aquatic life criteria or objectives would apply include, but are not necessarily limited to warm freshwater habitat (WARM), cold freshwater habitat (COLD), and estuarine habitat (EST). Designated beneficial uses to which (federal) human health criteria/objectives would apply include, but are not necessarily limited to, municipal and domestic supply (MUN) and water contact recreation (REC-1)." Section 1.3 of the SIP requires a water-quality based effluent limitation when the maximum effluent concentration (MEC) or observed maximum receiving water background concentration (B) of a priority pollutant exceeds an appropriate CTR/NTR pollutant criterion or more stringent criterion as described in Section 1.1 of the SIP.
- c. When required, Section 1.4 of the SIP provides four methods that may be used to develop effluent limitations. These four methods include: (1) assigning a loading allocation based upon a completed TMDL; (2) use of a steady state model; (3) use of a dynamic model; or, (4) establishing effluent limitations that consider intake water pollutants. Section 5.4 of the TSD also describes the use of a steady state model for development of effluent limitations. Water quality-based effluent limitations have been developed in this Order using the steady state model described in Section 1.4 of the SIP or the TSD where appropriate.
- d. *Antimony*- Based on information included in analytical laboratory results submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NTR criteria for antimony. The NTR includes criteria for the protection of human health based on a one-in-a-million cancer risk for antimony. Municipal and domestic supply is a beneficial use of the receiving stream. The criterion for waters from which both water and organisms are consumed is 14 µg/L. The maximum observed effluent antimony

concentration was 24 µg/L. The maximum observed upstream receiving water antimony concentration was 18 µg/L. An effluent limitation for antimony is included in this Order and is based on protection of the beneficial use of municipal and domestic water supply. It is unknown whether the Discharger can meet these new effluent limitations for antimony. Where the Regional Board determines that it is infeasible to achieve immediate compliance with an adopted water quality objective, the Board may establish in NPDES permits a schedule of compliance. However, schedules of compliance are only authorized for those water quality objectives adopted after September 1995. The NTR human health criteria for antimony were established prior to 1995; therefore this Order does not contain a compliance schedule for antimony. A separate Time Schedule Order shall be proposed for compliance with the antimony effluent limitations.

- e. *Arsenic*- The CTR did not establish a human health criterion for arsenic. The Basin Plan Chemical Constituents Objective states: "To protect all beneficial uses the Regional Board may apply limits more stringent than MCLs." At page III-8.00 the Basin Plan Toxicity Objective states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life". The Basin Plan further states: "The Regional Board will also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective." On 22 January 2001 the USEPA adopted a new standard for arsenic. Public water systems must comply with the 10 µg/L MCL beginning January 23, 2006. After publishing the final arsenic rule on January 22, 2001, USEPA postponed the effective date of the rule until February 22, 2002, requested public comment on the standard, and began reviewing the new standard, the science, costs and benefits analyses that supported the regulation. As announced by the Administrator on October 31, 2001, USEPA will not further postpone the January 2001 rule, and USEPA also does not expect to take any other additional action relative to the July 2001 proposal in the interim (April 17, 2002 Federal Register notice, 67 FR 19030, footnote 3 of Table III-2 at 19037). Reports and recommendations on the science, cost of compliance, and benefits analyses in support of the 10 µg/L final arsenic in drinking water rule were made available for review and public comment until October 31, 2001. These reports were prepared by independent, expert panels convened by the National Academy of Sciences, the National Drinking Water Advisory Council, and the USEPA Science Advisory Board. The current DHS Primary MCL for arsenic identified in Title 22 of the California Code of Regulations is 50 µg/L. By federal law, MCLs established by DHS must be at least as stringent as the federal MCL if one exists. The California Health and Safety Code Section 116361 required the Department of Health Services to adopt a new drinking water standard for arsenic by June 30, 2004. Meeting that date was not possible because a Public Health Goal (PHG) was unavailable. In April 2004, the California Office of Environmental Health Hazard Assessment (OEHHA) established a PHG for arsenic of 0.004 µg/L. The PHG is based on risks associated with cancers of the lung and urinary bladder. State law requires DHS to establish an MCL for arsenic at a level as close as technically and economically feasible to the PHG. Monitoring conducted by the Discharge indicates the MEC for arsenic was 8.4 µg/L, with a projected MEC of 35 µg/L. The maximum observed ambient background receiving water arsenic concentration was 12 µg/L. Considering; the MUN beneficial use, the arsenic projected MEC, the lack of assimilative capacity, the chemical constituents and toxicity objectives of the Basin Plan, information from the National Academy of Sciences, the National Drinking Water Advisory Council, the USEPA Science Advisory Board, the California Office of Environmental Health Hazard Assessment, and the fact that the DHS MCL must be at least as stringent as the federal MCL, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. Therefore, this Order includes an average monthly effluent limitation (AMEL) for arsenic considering the USEPA recommendations for permitting for human health protection provided in Section 5.4.4 of the TSD. The AMEL was set equal to

the Waste Load Allocation (WLA), or in this case, the MCL (10 µg/L, total recoverable). Additionally, the Basin Plan, in Table 111-1, at page III-3.00 establishes a Trace Element Water Quality Objective for arsenic that applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 10 µg/L. When converting from total recoverable to dissolved for comparison with the arsenic objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for arsenic considering a default translator of 1. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for arsenic. However, at this time, this Order also includes a maximum daily effluent limitation for arsenic of 10 µg/L considering protection of the Basin Plan Objective and lack of assimilative capacity, expressed in the dissolved form. While NPDES regulations at 40 CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. Considering the projected MEC for arsenic, it is unknown whether the Discharger can comply with these new effluent limitations for arsenic. As the Basin Plan chemical constituents and toxicity objectives are not new objectives, a schedule of compliance for arsenic is not included in this Order. A separate Time Schedule Order shall be proposed for compliance with the arsenic effluent limitations.

- f. *Copper*- Copper can be toxic to freshwater aquatic life in concentrations that exceed acute and chronic water quality criteria contained in the CTR. Aquatic habitat is a beneficial use of the Delta. The CTR includes freshwater, acute and chronic aquatic life ambient water quality criteria for copper of 15 µg/L and 10 µg/L respectively (expressed as total recoverable), based upon the minimum design receiving water hardness of 108 mg/L (as CaCO₃). Monitoring indicates the MEC for copper was 2.6 µg/L, and the maximum ambient background receiving water concentration (B) for copper was 26 µg/L. In accordance with Section 1.3, Step 6 of the SIP, if the observed maximum ambient background concentration of a pollutant exceeds an applicable priority pollutant criterion and is detected in the effluent, a water quality-based effluent limitation is required. The observed maximum ambient background concentration of copper exceeds both the acute and chronic criteria established by the CTR. Therefore, this Order includes a MDEL and AMEL for copper, developed in accordance with Section 1.4 of the SIP. Because copper was not detected in effluent samples at concentrations exceeding the most stringent water quality criterion, the Discharger is expected to be able to comply with final limitations for copper upon adoption of this Order. Interim limits and a compliance schedule for copper are not justified and are not included in this Order.
- g. *Mercury*- Based on information submitted by the Discharger, the discharge contains mercury. The Delta waterways are listed in accordance with Clean Water Act Section 303(d) as impaired for mercury based on bioaccumulation of this pollutant in fish tissue. The CTR contains criteria for mercury. The CTR criteria, however, do not address bioaccumulation in the river. The Facility's effluent contains detectable levels of mercury below CTR priority pollutant criteria. Since the CTR criteria are not based on bioaccumulation, the discharge was evaluated based on the Basin Plan's narrative toxicity objective. Any loading of mercury from the discharge may have the reasonable potential to cause or contribute to an excursion above the narrative toxicity objective by causing bioaccumulation in fish tissue. Health advisories by the Department of Health Services remain in effect for human consumption of fish in the Delta, including the San Joaquin River at Manteca, due to excessive concentrations of mercury in fish flesh. These current warnings and available fish tissue data confirm that there is currently no assimilative capacity for mercury. Therefore, discharge of mercury to the receiving water is likely to contribute to exceedances of the narrative toxicity objective, impacts on beneficial uses, and violation of a water quality standard.

At Section 2.1.1 the SIP states: "For bioaccumulative priority pollutants for which the receiving water has been included on the CWA Section 303(d) list, the Regional Board should consider whether the mass loading of the bioaccumulative pollutant(s) should be limited to representative, current levels pending TMDL development in order to implement the applicable water quality standard". Since mercury is a bioaccumulative pollutant included on the CWA

303(d) list for the Delta, the intent of this Order is to include an interim performance based effluent limitation for mercury.

Current mercury data are not sufficient for establishment of an interim performance based limitation. This Order requires the Discharger to collect data necessary to establish an interim performance based effluent mass limitation.

Performance-based effluent limits for mercury are typically established as follows: 1) The average monthly effluent mercury concentration is calculated by adding all detected concentrations and one-half of the reported detection levels of all non-detectable mercury concentration results; 2) From the average monthly mercury concentration and average monthly flow, a monthly mercury mass discharge is calculated; and 3) A total mass for all months is then totaled, and an average annual mass discharge is calculated.

Following the establishment of the interim limit, the mass of mercury discharged shall not exceed the interim mercury mass limit twelve months on a running average. In calculating for compliance, the Discharger shall count all non-detect measures at one-half of the detection level and apply the monthly average flow from the sampled discharge. If compliance with the effluent limit is not attained due to the non-detect contribution, the Discharger will be directed to improve and implement available analytical capabilities and compliance will be evaluated with consideration of the detection limits. For each calendar month, the Discharger shall calculate twelve-month mass loadings. For monthly measures, monthly loadings shall be calculated using the average monthly flow and the average of all mercury analyses conducted that month. The Discharger shall submit a cumulative total of mass loadings for the previous twelve months with each self-monitoring report. Compliance will be determined based on the previous 12-month moving averages over the previous twelve months of monitoring.

Upon completion of the Interim Mercury Mass Limitation Study required by this Order, this Order shall be reopened and an interim performance based mercury mass effluent limitation established.

- h. *Lead, Chlorodibromomethane, Dichlorobromomethane, and Bis(2-Ethylhexyl)Phthalate (DEHP)*- Insufficient information is available to determine whether lead, chlorodibromomethane, dichlorobromomethane, and DEHP levels in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria. Instead of limitations, additional monitoring has been established for these constituents with a re-opener provision should monitoring results indicate that the discharge has the reasonable potential to cause an exceedance of water quality criteria.
- i. The reasonable potential analysis for priority pollutants detected in the effluent and/or receiving water is summarized below in Table F-2:

Table F-2.
RPA Summary for Detected Priority Pollutants
Discharge Point 001

	n ¹	cv ²	RPA multiplier ³	MEC	Projected MEC ⁴	B ⁵	WQO/WQC ⁶	Source	RP
1 Antimony (ug/L)	4	0.6	1	24	24	18	14	NTR HH	Y
2 Arsenic (ug/L)	5	0.6	4.2	8.4	35	12	10	Basin Plan	Y
4 Cadmium (ug/L)	5	0.6	1	ND	ND	0.18	2.6/4.9	CTR CCC/CMC	N
5a Chromium (III) (ug/L)	5	0.6	4.2	5.9	25	4.6	50	California Primary MCL	N
5b Chromium (VI) (ug/L)	4	0.6	1	0.3	0.3	ND	11/16	CTR CCC/CMC	N
6 Copper (ug/L)	5	0.6	1	2.6	2.6	26	10/15	CTR CCC/CMC	Y
7 Lead (ug/L)	5	0.6	1	ND	ND	5.5	4/90	CTR CCC/CMC	I ⁷
8 Mercury (ug/L)	5	0.6	1	0.004	0.004	0.04	0.05	CTR HH	N
9 Nickel (ug/L)	4	0.6	1	3.3	3.3	7	56/501	CTR CCC/CMC	N

	n ¹	cv ²	RPA multiplier ³	MEC	Projected MEC ⁴	B ⁵	WQO/WQC ⁶	Source	RP
11 Silver (ug/L)	5	0.6	1	2	2	ND	4.6	CTR CMC	N
13 Zinc (ug/L)	5	0.6	1	11	11	35	128	CTR CCC and CMC	N
23 Chlorodibromomethane (ug/L)	4	0.6	1	ND	ND	1	0.41	CTR HH	I ⁷
26 Chloroform (ug/L)	4	0.6	4.7	0.3	1.4	7.9	1.1	CALEPA Cancer Potency Factor, Drinking Water	N
27 Dichlorobromomethane (ug/L)	4	0.6	1	ND	ND	2.8	0.56	CTR HH	I ⁷
39 Toluene (ug/L)	4	0.6	1	ND	ND	1.3	6,800	CTR HH	N
68 Bis(2-Ethylhexyl)Phthalate (ug/L)	4	0.6	1	ND	ND	12	1.8	NTR HH	I ⁷

1. Number of data points available.
2. Coefficient of variation.
3. Statistically determined 99th percentile multiplier.
4. Determined using RPA multiplier.
5. Background receiving water concentration. ND=non-detect.
6. Applicable water quality objectives and criteria.
7. Indeterminate, inadequate information to establish limitations.

OTHER POLLUTANTS

- j. For non-priority pollutants, a Reasonable Potential Analysis (RPA) was conducted in accordance with the USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] (TSD). The TSD recommends a water quality-based effluent limit when the projected maximum effluent concentration (MEC) of a pollutant exceeds an applicable and appropriate pollutant criterion. The projected MEC is determined by multiplying the observed MEC by a factor that accounts for statistical variation. The multiplying factor is determined (for 99% confidence level and 99% probability basis) using the number of effluent sample results available and the coefficient of variation (standard deviation divided by the mean) of the effluent sample results. This projected MEC was then compared to the appropriate water quality criterion. If the projected MEC exceeded this criterion, the pollutant was determined to have reasonable potential, and an effluent limitation was established.

Basin Plan Objectives

- k. **Barium-** A Trace Element Water Quality Objective for barium listed in Table 111-1, at page III-3.00 of the Basin Plan applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 100 µg/L. Results of monitoring conducted by the discharger indicate a MEC for barium of 198 µg/L, a projected MEC for barium of 832 µg/L, and receiving water concentrations ranging from 5.2 µg/L to 88 µg/L, all measured as total recoverable. When converting from total recoverable to dissolved for comparison with the barium objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for barium considering a default translator of 1. Therefore, this Order includes a maximum daily effluent limitation for barium of 100 µg/L considering protection of the Basin Plan objective, expressed in the dissolved form. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for barium. While NPDES regulations at 40CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. It is unknown whether the Discharger can meet this new effluent limitation for barium. As the Basin Plan objective for barium is not a new objective, a schedule of compliance for barium is not included in this Order. A separate Time Schedule Order shall be proposed for compliance with the barium effluent limitations.

MUN Beneficial Use, Basin Plan Chemical Constituents Objective

- I. For Chemical Constituents at page III-3.00, the Basin Plan states '*At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations...*' Federal regulations at 40 CFR Section 122.44(d)(1)(vi)(A) allow the state to establish effluent limitations using an explicit state policy interpreting its narrative objectives. Use of MCL's is appropriate to implement the chemical constituents objective of the Basin Plan. As noted previously, the MUN use applies to the Delta.
- m. *Iron*- Title 22 of the California Code of Regulations (CCR Title 22), Table 64449-A, establishes a secondary MCL of 300 µg/L for iron. As MUN is an existing use of the Delta, the MCL for iron is applicable to this Order. Results of monitoring conducted by the discharger indicate a MEC for iron of 300 µg/L, a projected MEC for iron of 1,230 µg/L, and receiving water concentrations ranging from 365 µg/L to 2,400 µg/L. Considering the MEC and projected MEC, the lack of assimilative capacity, and the MUN beneficial use of the Delta, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. Therefore, this Order includes an AMEL for iron considering the USEPA recommendations for permitting for human health protection provided in Section 5.4.4 of the TSD. The AMEL was set equal to the Waste Load Allocation (WLA), or in this case, the MCL (300 µg/L). Additionally, the Basin Plan, in Table 111-1, at page III-3.00 establishes a Trace Element Water Quality Objective for iron that applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 300 µg/L. When converting from total recoverable to dissolved for comparison with the iron objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for iron considering a default translator of 1. Therefore, this Order also includes a maximum daily effluent limitation for iron of 300 µg/L considering protection of the Basin Plan objective and lack of assimilative capacity, expressed in the dissolved form. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for iron. While NPDES regulations at 40 CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. It is unknown whether the Discharger can meet these new effluent limitations for iron. Where the Regional Board determines that it is infeasible to achieve immediate compliance with an adopted water quality objective, the Board may establish in NPDES permits a schedule of compliance. However, schedules of compliance are only authorized for those water quality objectives adopted after September 1995. The Basin Plan chemical constituents objective was established prior to 1995; therefore this Order does not contain a compliance schedule for iron. A separate Time Schedule Order shall be proposed for compliance with the iron effluent limitations.
- n. *Manganese*- CCR Title 22, Table 64449-A, establishes a secondary MCL of 50 µg/L for manganese. As MUN is an existing use of the Delta, the MCL for manganese is applicable to this Order. Results of monitoring conducted by the discharger indicate a MEC for manganese of 1,060 µg/L, a projected MEC for manganese of 4,982 µg/L, and receiving water concentrations ranging from 50 µg/L to 219 µg/L. Considering the MEC and projected MEC, the lack of assimilative capacity, and the MUN beneficial use of the Delta, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. Therefore, this Order includes an AMEL for manganese considering the USEPA recommendations for permitting for human health protection provided in Section 5.4.4 of the TSD. The AMEL was set equal to the Waste Load Allocation (WLA), or in this case, the MCL (50 µg/L). Additionally, the Basin Plan, in Table 111-1, at page III-3.00 establishes a Trace Element Water Quality Objective for manganese that applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 50 µg/L. When converting from total recoverable to dissolved for comparison with the manganese objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for manganese considering a default translator of 1. Therefore, this Order also includes a maximum daily effluent limitation for manganese of 50 µg/L considering protection of the Basin

Plan objective and lack of assimilative capacity, expressed in the dissolved form. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for manganese. While NPDES regulations at 40 CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. It is unknown whether the Discharger can meet these new effluent limitations for manganese. Where the Regional Board determines that it is infeasible to achieve immediate compliance with an adopted water quality objective, the Board may establish in NPDES permits a schedule of compliance. However, schedules of compliance are only authorized for those water quality objectives adopted after September 1995. The Basin Plan chemical constituents objective was established prior to 1995; therefore this Order does not contain a compliance schedule for manganese. A separate Time Schedule Order shall be proposed for compliance with the manganese effluent limitations.

AGR/MUN Beneficial Use, Basin Plan Chemical Constituents Objective

- o. *Salinity*- The discharge contains total dissolved solids (TDS), chloride and electrical conductivity. These are water quality parameters that are typically indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of the water for human consumption. There are no USEPA water quality criteria for protection of aquatic organisms for these constituents. The Basin Plan "Chemical Constituent" objective incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity. The secondary California maximum contaminant level (MCL) for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would implement the narrative "Chemical Constituent" objective, is 450 mg/L as a long-term average based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The recommended agricultural water quality goal for chloride, that would implement the narrative "Chemical Constituent" objective, is 106 mg/L based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The Basin Plan water quality objectives for electrical conductivity for the South Delta are 700 umhos/cm (from April 1 to August 31) and 1000 umhos/cm (from September 1 to March 31).

A review of the Discharger's monitoring reports from January 2000 through December 2004 indicates an average TDS effluent concentration of 736 mg/L, a minimum effluent concentration of 578 mg/L, and a maximum effluent concentration of 1010 mg/L (based on 5 data points). These concentrations exceed the applicable objectives. Limited TDS data collected at receiving water sample location R1 from January 2002 through December 2002 showed a TDS concentration range from 414 mg/L to 600 mg/L with an average of 528 mg/L, based on 4 sampling events. The Regional Board report *Total Maximum Daily Load for Salinity and Boron in the Lower San Joaquin River (January 2002)* presented monthly average TDS data for the San Joaquin River at Vernalis from October 1976 through September 1997. The Vernalis data showed a maximum monthly average TDS of 1024 mg/L with 57 of 252 months having monthly averages greater than 500 mg/L. This data indicates that the receiving water frequently exceeds water quality objectives to protect its beneficial uses and lacks assimilative capacity for TDS. As water exported from the Delta by the State Water Project is, in part, mixed with Colorado River water to provide municipal water supply with an acceptable TDS, any increase in salt concentration effectively reduces the available water supply in Southern California (*Metropolitan Water District of Southern California, Salinity Management Study, 1998*).

Chloride concentrations in the effluent ranged from 153-207 mg/L with an average of 182 mg/L based on results from ten samples collected from January 2000 through December 2004. Background concentrations in the San Joaquin River ranged from 31-182 mg/L with an average of 112 mg/L based on results from nine samples collected from January 2000 through

December 2004. Both the receiving water and the effluent exceed the water quality objective of 106 mg/L based on the narrative objective.

Electrical conductivity (EC) shows reasonable potential to exceed water quality objectives in both the effluent and in the receiving water. A review of the Discharger's monitoring reports from January 2000 through December 2004 shows the long-term average effluent EC is 1167 umhos/cm, the minimum effluent concentration is 683 umhos/cm, and the maximum effluent concentration is 1930 umhos/cm. These levels exceed the applicable objectives. EC data collected at receiving water sample location R-001 from January 2002 through July 2003 show that the conductivity in the receiving water ranged from 790 umhos/cm to 1180 umhos/cm and averaged 1,012 umhos/cm in 4 sampling events. Hourly EC data collected at the Department of Water Resources (DWR) Mossdale monitoring station (RSAN087) from December 2000 through September 2002 show that the conductivity in the San Joaquin River ranged from 299 umhos/cm to 1,131 umhos/cm and averaged 721 umhos/cm. San Joaquin River monitoring for electrical conductivity at Vernalis between 1985 and 1998 showed frequent exceedences of the EC water quality objectives (Reference Figure 1-3, *Total Maximum Daily Load for Salinity and Boron in the Lower San Joaquin River (January 2002)*). These data show that the receiving water frequently has no assimilative capacity for EC.

Water quality objectives for EC in the Delta are set forth in Table III-5 of the Basin Plan. Water quality objectives in the Table were taken from the *Water Quality Control Plan for Salinity, San Francisco Bay/Sacramento-San Joaquin Delta Estuary, 91-15 WR, May 1991* (1991 Delta Plan). Table 1-1 of the 1991 Delta Plan specifies water quality objectives for EC to protect agriculture in the area covered by the Plan. The Table includes water quality objectives for EC at the Vernalis gage station, and three Southern Delta locations, of: 0.7 millimhos per centimeter (mmhos/cm) from April 1 through August 31, and 1.0 mmhos/cm from September 1 through March 31. In 1995, the State Board adopted a revised water quality control plan for the Delta (1995 Delta Plan) which delayed the implementation date for the EC objectives in the southern Delta until December 31, 1997. The most recent State Board action with respect to the EC water quality objectives in the southern Delta was adoption of State Board Resolution No. 2004-0062 on September 30, 2004. The resolution adopted the staff report for the periodic review of the 1995 Delta Plan and affirmed the plan as it currently exists until changed by action of the State Board. In adopting the staff report, the State Board accepted the recommendation to receive further information to help decide whether to amend several provision of the plan, including the southern Delta EC objectives.

In Order WQ 2005-0005 for the City of Manteca WQCF, the State Board found that the lengthy record of prior State Board decisions and water quality control plans for the Delta establishes that the salinity problems in the southern Delta are the result of many inter-related conditions, including water diversions upstream of the Delta, water diversions within the Delta for export and local use, high levels of salinity in irrigation return flows discharged to Delta waterways and tributaries, groundwater inflow, seasonal flow variations, and tidal conditions. State Board also found that although discharge of treated wastewater to the Delta or its tributaries under an NPDES permit can affect EC in the southern Delta, previous State Board decisions and water quality control plans do not discuss treated effluent discharges as a source of salinity in the southern Delta.

The Discharger currently has no means of treating the discharge, and the costs of compliance with the new effluent limitation for EC are unknown. As the source of water in the discharge is primarily groundwater, the discharge is not readily amenable to source control measures, and the only likely option to assure compliance with the 700 umhos/cm EC effluent limitation would involve construction and operation of a reverse osmosis treatment plant for a least a portion of the discharge. Operation of a reverse osmosis plant would result in a brine discharge, for which a means of disposal would have to be developed.

However, since the discharge has the reasonable potential to cause, or contribute to an existing salinity impairment of the Delta, this Order includes effluent limitations for EC. Since

there are times of limited or no assimilative capacity in the receiving water, these limitations have been established considering the seasonal water quality objectives of the basin Plan of 700 umhos/cm from April 1 through August 31, and 1000 umhos/cm from September 1 through March 31.

The TDS, chloride, and electrical conductivity objectives and recommended levels are all measures of the salt content of the water. Compliance with the effluent limitations for electrical conductivity based on the Basin Plan water quality objectives for electrical conductivity in the South Delta will be protective of the chloride and TDS recommended levels; therefore, no limitations are included for chloride and TDS. It is unknown whether the Discharger can meet these new effluent limitations for electrical conductivity. As the Basin Plan conductivity objectives are not new water quality objectives, a schedule of compliance for electrical conductivity is not included in this Order. A separate Time Schedule Order is proposed for compliance with the new electrical conductivity effluent limitations.

- p. *Boron and Fluoride*- Insufficient information is available to determine whether boron and fluoride levels in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality objectives. There is limited effluent data available for each of these constituents; also, as indicated in Table F-3, detected effluent data points are less than the respective WQOs. Instead of limitations, additional monitoring has been established for these constituents with a re-opener provision should monitoring results indicate that the discharge has the reasonable potential to cause an exceedance of water quality objectives for these constituents.

Aquatic Life Beneficial Use, Basin Plan Narrative Toxicity Objective

- q. *Aluminum*- According to information submitted by the Discharger in the Report of Waste Discharge and in additional submittals of analytical laboratory results, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the USEPA National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. Aluminum was detected in an effluent sample collected January 23, 2001 at a concentration of 130 µg/L. The recommended continuous concentration (maximum four-day average concentration) is 87 µg/L and the recommended maximum concentration (maximum one-hour average concentration) is 750 µg/L. The measured and projected maximum effluent concentrations are greater than the water quality criteria; therefore, effluent limitations for aluminum are required. Using the methodology in the USEPA's Technical Support Document (TSD) for Water Quality-Based Toxics Control, conversion of the limitation from an 1-hour average to a daily maximum, and 4-day average to a monthly average was done to allow effluent limitations to be consistent sampling frequencies defined by the monitoring and reporting program.

In USEPA's *Ambient Water Quality Criteria for Aluminum—1988* [EPA 440/5-86-008], USEPA states that “[a]cid-soluble aluminum...is probably the best measurement at the present...”; however, USEPA has not yet approved an acid-soluble test method for aluminum. Replacing the ICP/AES portion of the analytical procedure with ICP/MS would allow lower detection limits to be achieved. Based on USEPA's discussion of aluminum analytical methods, this Order allows the use of the alternate aluminum testing protocol described above to meet monitoring requirements.

It is unknown whether the Discharger can meet these new effluent limitations for aluminum. As the Basin Plan toxicity objective is not a new water quality objective, a schedule of compliance for aluminum is not included in this Order. A separate Time Schedule Order shall be proposed for compliance with the new aluminum effluent limitations.

- r. *Ammonia (as N)*- Ammonia can be toxic to aquatic organisms in surface waters. Aquatic habitat is a beneficial use of the receiving stream. USEPA has developed Ambient Water Quality Criteria for ammonia. Applying 40 CFR section 122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms. The acute criterion for ammonia is dependent on pH and fish species present, and the chronic criterion is dependent on pH and temperature. In general, ammonia toxicity increases with increases in pH and temperature. At lower temperatures, the chronic criterion is also dependent on the presence or absence of early life stages of fish (ELS).

The beneficial uses of the Delta include warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), migration of aquatic organisms (MIGR) in warm and cold habitat, warm habitat spawning, and reproduction, and/or early development (SPWN). The early life stages of fish are likely present during the permitted period of discharge.

Because of the seasonal variation in pH and temperature of the receiving water and the sensitivity of the ammonia criteria to these conditions, seasonal limitations are established. For the warm weather months (June 1 to September 30), the maximum permitted receiving water pH is 8.5 and the maximum observed receiving water temperature is 78° F. Using the maximum permitted receiving water pH (8.5 pH Units) and the highest reported temperature of 78° F, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, 30 day average chronic criteria, or criterion continuous concentration for ammonia is 520 µg as N (Nitrogen)/L. Additionally, the highest 4 day average concentration within the 30 day period should not exceed 2.5 times this criterion ($2.5 \times 520 = 1,300$ µg as N/L). Considering the maximum permitted pH of 8.5, and the presence of salmonids, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, maximum 1-hour acute criteria, or criteria maximum concentration for ammonia is 2,140 µg as N/L.

For the cool weather months (October 1 to May 31), the maximum permitted receiving water pH is 8.5 and the maximum observed receiving water temperature is 69° F. Using the maximum permitted receiving water pH (8.5 pH Units) and the highest reported temperature of 69° F, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, 30 day average chronic criteria, or criterion continuous concentration for ammonia is 718 µg as N (Nitrogen)/L. Additionally, the highest 4 day average concentration within the 30 day period should not exceed 2.5 times this criterion ($2.5 \times 718 = 1,795$ µg as N/L). Considering the maximum permitted pH of 8.5, and the presence of salmonids, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, maximum 1-hour acute criteria, or criteria maximum concentration for ammonia is 2,140 µg as N/L.

Ammonia was detected in one of four samples of the Discharger's effluent at a concentration of 1100 µg/L. Using the TSD reasonable potential analysis procedure, the projected MEC of ammonia in the effluent is 5,170 µg/L; therefore, there is a reasonable potential that the discharge may exceed the USEPA chronic and acute criteria for ammonia and cause or contribute to an excursion above the narrative toxicity objective. This Order contains warm weather and cool weather seasonal AMELs considering the USEPA chronic criteria, and a one hour maximum effluent limitation considering USEPA's acute ammonia criteria – applicable year-round. It is unknown whether the Discharger can meet these new effluent limitations for ammonia. As the Basin Plan toxicity objective is not a new water quality objective, a schedule of compliance for ammonia is not included in this Order. A separate Time Schedule Order is proposed for compliance with the new ammonia effluent limitations.

Other

- s. *Chlorine, Total Residual*- Previous Order No. 98-123 established a MDEL for chlorine, total residual of 0.02 mg/L. The limitation was established because pool filters backwash water, containing chlorine, was a part of the discharge. This Order continues the chlorine, total

residual MDEL because chlorine has been detected in the effluent during recent sampling events even though pool filters backwash is no longer discharged at the Facility.

- t. *pH*- The Basin Plan includes numeric water quality objectives that the pH "...not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The Delta is designated as having both COLD and WARM beneficial uses. And effluent limitation for pH is included in this Order based on the Basin Plan objectives for pH.
- u. *Dissolved Oxygen (DO)* – The DO objectives are frequently not met in the San Joaquin River, leading to the Clean Water Act section 303(d) listing. In 1998, the Regional Board classified the DO impairment within the San Joaquin River as a Toxic Hot Spot, making it a high priority problem for correction. A TMDL implementation plan was submitted to the Regional Board in February 2003. Staff has developed and submitted to the USEPA in June 2003 a TMDL report for controlling the problem. The existing low DO conditions in the Stockton Deep Water Ship Channel (DWSC) are partially the result of channel morphology, and point and non-point sources that are beyond the control of the Discharger. Previous Order No. 98-123 required that the Discharger monitor COD in the discharge and DO in the discharge and receiving waters. This Order continues the COD and DO monitoring established by Previous Order No. 98-123 to monitor the effects of the discharge on the receiving water.

Based on the above information, further action by the Discharger to reduce its impact on the San Joaquin River DO concentration, beyond the requirements of this permit, will not be required by the Regional Board until such time as the TMDL for DO has been developed and approved by USEPA. This Order contains a provision to allow for the permit to be reopened to consider modification of effluent limitations after the DO TMDL is finalized.

- v. The reasonable potential analysis for non-priority pollutants detected in the effluent and/or receiving water is summarized below in Table F-3:

Table F-3.
RPA Summary for Detected Non-priority Pollutants
Discharge Point 001

	n ¹	cv ²	RPA multiplier ³	MEC	Projected MEC ⁴	B ⁵	WQO/WQC ⁶	Source	RP
Aluminum (ug/L)	5	0.6	4.2	130	546	1470	87/750	CCC/CMC USEPA Recommended Criteria	Y
Ammonia as N (ug/L)	4	0.6	4.7	1100	5170	20000	520/2140	CCC/CMC USEPA Recommended Criteria	Y
Barium (ug/L)	5	0.6	4.2	198	832	88	100	Basin Plan	Y
Boron (ug/L)	1	0.6	13.2	400	5280	NA	700	Agricultural Water Quality Limits	I ⁷
Conductivity (umhos/cm)	215	0.2	1.1	1930	2123	1180	700/1000	Basin Plan	Y
Diaznon (ug/L)	4	0.6	4.7	ND	ND	0.08	0.05/0.08	DFG 4-day/1-day	N
Fluoride (mg/L)	10	1.1	5.9	0.3	1.8	0.5	1	Agricultural Water Quality Limits	I ⁷
Iron (ug/L)	10	0.8	4.1	300	1230	2400	300	Basin Plan	Y
Manganese (ug/L)	10	0.9	4.7	1060	4982	219	50	Basin Plan	Y
Methylmercury (ug/L)	3	0.6	5.6	4E-05	0.000241	NA	0.07	USEPA IRIS	N
Nitrate-N (mg/L)	10	0.6	3.0	0.4	1.2	2.86	10	California Primary MCL	N
Sulfate (mg/L)	10	0.1	1.2	80	96	121	250-500	California and USEPA secondary MCL	N

1. Number of data points available.
2. Coefficient of variation.
3. Statistically determined 99th percentile multiplier.
4. Determined using RPA multiplier.
5. Background receiving water concentration. ND=non-detect, NA=not available.
6. Applicable water quality objectives and criteria.
7. Indeterminate. Not enough information to establish limitations.

4. WQBEL Calculations

- a. The Discharger conducted monitoring for priority and non-priority pollutants. The analytical results of four comprehensive sampling events were submitted to the Regional Board. The results of these sampling events were used in developing this Order. Effluent limitations are included in the Order to protect the beneficial uses of the receiving water and to ensure that the discharge complies with the Basin Plan objective that toxic substances not be discharged in toxic amounts.
- b. **Flow.** Previous Order No. 98-123 established a maximum daily peak discharge flow of 18.6 mgd. This Order continues the maximum daily effluent flow limitation of 18.6 mgd.
- c. **Mass-based Effluent Limitations.** Mass-based limitations are based upon the maximum permitted effluent flow of 18.6 mgd.
- d. For non-POTWs, USEPA recommends a maximum daily limitation rather than an average weekly limitation for water-quality based permitting. Where applicable, WQBELs based on weekly averages were converted to maximum daily effluent limitations using the procedures outlined in the TSD.
- e. Effluent limitations for water quality-based limitations were calculated in accordance with Section 1.4 of the SIP and Chapter 5 of the TSD. Detailed numeric calculations for constituents with WQBELs are shown in Attachment H. WQBELs are summarized below in Table F-4. The following paragraphs describe the general methodology used for calculating effluent limitations.
- f. **Calculations for Effluent Limitations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

$$ECA_{HH} = HH$$

where: ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion
 $ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion
 ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective
CMC = criteria maximum concentration (one-hour average)
CCC = criteria continuous concentration (four-day average, unless otherwise noted)
HH = human health, agriculture, or other long-term criterion/objective

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL). The statistical multipliers were calculated using data shown in Tables F-2 and F-3.

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL} \left[\min \left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic} \right) \right]$$

$$MDEL = mult_{MDEL} \left[\min \left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}} \right) \right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH}$$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
 $mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
 M_A = statistical multiplier converting CMC to LTA
 M_C = statistical multiplier converting CCC to LTA

Table F-4.
Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	18.6	--	--
Antimony (total recoverable)	µg/L	14	--	28	--	--
	lbs/day	2.2	--	4.4	--	--
Arsenic (total recoverable)	µg/L	10	--	--	--	--
	lbs/day	1.6	--	--	--	--
Arsenic (dissolved)	µg/L	--	--	10	--	--
	lbs/day	--	--	1.6	--	--
Copper (total recoverable)	µg/L	7.5	--	15	--	--
	lbs/day	1.2	--	2.3	--	--
Barium (dissolved)	µg/L	--	--	100	--	--
	lbs/day	--	--	16	--	--
Iron (total recoverable)	µg/L	300	--	--	--	--
	lbs/day	47	--	--	--	--
Iron (dissolved)	µg/L	--	--	300	--	--
	lbs/day	--	--	47	--	--
Manganese (total recoverable)	µg/L	50	--	--	--	--
	lbs/day	7.8	--	--	--	--
Manganese (dissolved)	µg/L	--	--	50	--	--
	lbs/day	--	--	7.8	--	--
Specific Conductance (EC at 25°C)	µmhos/cm	700 (1 Apr-31Aug) 1000 (1Sep-31Mar)	--	--	--	--
Aluminum (total recoverable)	µg/L	71	--	140	--	--
	lbs/day	11	--	22	--	--
Ammonia (June-Sep) (total recoverable)	mg/L	0.52	--	--	--	--
	lbs/day	81	--	--	--	--
Ammonia (Oct-May) (total recoverable)	mg/L	0.72	--	--	--	--
	lbs/day	110	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual	mg/L	--	--	0.02	--	--
	lbs/day	--	--	3	--	--
pH	standard units	--	--	--	6.5	8.5
Ammonia (total recoverable)	The maximum 1-hour average ammonia (total recoverable) in the discharge shall not exceed 2.1 mg/L or 330 lbs/day.					

5. Whole Effluent Toxicity (WET)

- a. *Acute Toxicity*- Basin Plan acute toxicity requirements dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. However, previous Order No. 98-123 required that undiluted effluent not cause less than 90% survival in 96-hour static or continuous flow tests. Pursuant to Antidegradation requirements, this Order continuous the minimum 90% acute toxicity survival from previous Order No. 93-123.
- b. *Chronic Toxicity*- The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota.

D. Final Effluent Limitations

- a. 40 CFR 122.45 states that:

“...All pollutants limited in permits shall have limitations...expressed in terms of mass except...[f]or pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass...Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.”
- b. Final effluent limitations for Discharge Point 001 are summarized below in Table F-5.

Table F-5.
Summary of Final Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	--	--	18.6	--	--	Order No. 98-123, Antibacksliding
Total Suspended Solids	mg/L	20	30	50	--	--	Order No. 98-123, Antibacksliding
	lbs/day	3100	4600	7800	--	--	
Settleable Solids	ml/L	0.5	--	1.0	--	--	Order No. 98-123, Antibacksliding
Turbidity	NTU	15	20	25	--	--	Order No. 98-123, Antibacksliding
Antimony (total recoverable)	µg/L	14	--	28	--	--	NTR
	lbs/day	2.2	--	4.4	--	--	
Arsenic (total recoverable)	µg/L	10	--	--	--	--	USEPA Primary MCL
	lbs/day	1.6	--	--	--	--	
Arsenic (dissolved)	µg/L	--	--	10	--	--	Basin Plan
	lbs/day	--	--	1.6	--	--	
Copper (total recoverable)	µg/L	7.5	--	15	--	--	CTR
	lbs/day	1.2	--	2.3	--	--	
Barium (dissolved)	µg/L	--	--	100	--	--	Basin Plan
	lbs/day	--	--	16	--	--	
Iron (total recoverable)	µg/L	300	--	--	--	--	Secondary MCL
	lbs/day	47	--	--	--	--	
Iron (dissolved)	µg/L	--	--	300	--	--	Basin Plan
	lbs/day	--	--	47	--	--	
Manganese (total recoverable)	µg/L	50	--	--	--	--	Secondary MCL
	lbs/day	7.8	--	--	--	--	
Manganese (dissolved)	µg/L	--	--	50	--	--	Basin Plan
	lbs/day	--	--	7.8	--	--	
Specific Conductance (EC at 25°C)	µmhos/cm	700 (1 Apr-31Aug) 1000 (1Sep-31Mar)	--	--	--	--	Basin Plan
Aluminum (total recoverable)	µg/L	71	--	140	--	--	USEPA Recommended Criteria
	lbs/day	11	--	22	--	--	

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Ammonia (June-Sep) (total recoverable)	mg/L	0.52	--	--	--	--	USEPA Recommended Criteria
	lbs/day	81	--	--	--	--	
Ammonia (Oct-May) (total recoverable)	mg/L	0.72	--	--	--	--	
	lbs/day	110	--	--	--	--	
Chlorine, Total Residual	mg/L	--	--	0.02	--	--	Order No. 98-123, Antibacksliding
	lbs/day	--	--	3	--	--	
pH	standard units	--	--	--	6.5	8.5	Basin Plan
Ammonia (total recoverable)	The maximum 1-hour average ammonia (total recoverable) in the discharge shall not exceed 2.1 mg/L or 330 lbs/day.						USEPA Recommended Criteria

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. The Clean Water Act, Section 303(a-c), required states to adopt numeric criteria where they are necessary to protect designated uses. The Regional Board adopted numeric criteria in the Basin Plan. The Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control (40 CFR 131.20). State Board Resolution No. 68-16, the Antidegradation Policy, does not allow changes in water quality less than that prescribed in Water Quality Control Plans (Basin Plans). The Basin Plan states that; "The numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses." This Order contains Receiving Water Limitations based on the Basin Plan numerical and narrative water quality objectives for Biostimulatory Substances, Chemical Constituents, Color, Dissolved Oxygen, Floating Material, Oil and Grease, pH, Pesticides, Radioactivity, Salinity, Sediment, Settleable Material, Suspended Material, Tastes and Odors, Temperature, Toxicity and Turbidity.
2. *Fecal Coliform*- The Delta has been designated as having the beneficial use of contact recreation (REC-1). For water bodies designated as having REC-1 as a beneficial use, the Basin Plan includes a water quality objective limiting the "...*fecal coliform concentration based on a minimum of not less than five samples for any 30-day period...*" to a maximum geometric mean of 200 MPN/100 ml. The objective also states that "...[no] *more than ten percent of the total number of samples taken during any 30-day period [shall] exceed 400/100 ml.*" This objective is included in the Order as a receiving water limitation.
3. *Dissolved Oxygen*- The Basin Plan includes a water quality objective of maintaining a minimum of 5.0 mg/L of dissolved oxygen for the Delta in the vicinity of the discharge. Therefore, a receiving water limitation of 5.0 mg/L for dissolved oxygen was included in the Order.
4. *pH*- For all surface water bodies in the Sacramento River and San Joaquin River basins, the Basin Plan includes water quality objectives stating that "[t]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The Order includes receiving water limitations for both pH range and pH change.

The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in the Order.
5. *Electrical Conductivity*- The Basin Plan water quality objectives for electrical conductivity for the South Delta are 700 umhos/cm (from April 1 to August 31) and 1000 umhos/cm (from September 1 to March 31).
6. *Temperature*- The Delta has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature." The Order includes a receiving water limitation based on this objective.

7. *Turbidity*- The Basin Plan includes the following objective: “Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:
 - a. Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.
 - b. Where natural turbidity is between 5 and 10 NTUs, increases shall not exceed 20 percent.
 - c. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU.
 - d. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.”
8. *Chemical Constituents*- This Order includes receiving water limitations for the following chemical constituents contained in Table III-1, at page III-3.00 of the Basin Plan, applicable to Delta waters:

<u>Constituent</u>	<u>Unit</u>	<u>Limitation</u>
Dissolved Cyanide	mg/L	0.01
Dissolved Silver	mg/L	0.01
Dissolved Zinc	mg/L	0.1

Since this Order implements water quality-based effluent limitations for arsenic, barium, copper, iron, and manganese, receiving water limitations for these constituents have not been included in the receiving water limitations section of this Order.

B. Groundwater – Not Applicable

VI. MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this facility.

A. Influent Monitoring – Not Applicable

B. Effluent Monitoring

1. This Order continues the effluent monitoring established by previous Order No. 98-123's Monitoring and Reporting Program except for the following:
 - a. Sedimentation/recycle pond monitoring requirements have been discontinued because the ponds have been removed as part of the mine reclamation project.
 - b. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is also required for constituents on the 303(d) list. Table F-6 summarizes the additional monitoring required and the rational for assigning the monitoring.

Table F-6.
Summary of Additional Effluent Monitoring
Discharge Point 001

Parameter(s)	Monitoring Frequency	Rational
Total Suspended Solids	1x/Week	Determine compliance with AMEL, weekly average effluent limitation, and MDEL.
Settleable Solids	1x/Month	Determine compliance with AMEL and MDEL.
Antimony, Arsenic, Copper	1x/Month	Determine compliance with AMELs and MDELs.
Mercury	1x/Month	Collect data for an interim performance based effluent mass limitation for mercury.
Lead, Chlorodibromomethane, Dichlorobromomethane, Bis(2-Ethylhexyl)Phthalate	2x/Year	Inconclusive preliminary monitoring suggests that effluent limitations may be required for these parameters. Monitoring is assigned to gather additional information.
Barium	1x/Month	Determine compliance with MDEL.
Iron, Manganese	1x/Month	Determine compliance with AMELs and MDELs.
Chloride, TDS	1x/Quarter	Monitor compliance with salinity limitations and determine relationship between EC and TDS.
Aluminum	1x/Month	Determine compliance with AMEL and MDEL.
Ammonia	1x/Month	Determine compliance with AMEL and 1-hour maximum effluent limitation.
Boron and Fluoride	2x/Year	Inconclusive preliminary monitoring suggests that effluent limitations may be required for these parameters. Monitoring is assigned to gather additional information.
Chlorpyrifos, DDT, Diazinon, Endrin Aldehyde, Lindane	1x/Year	303(d) listed pollutants.

C. Whole Effluent Toxicity Testing Requirements

1. *Acute Toxicity*- Chapter III of the Basin Plan, establishes narrative toxicity water quality objectives and requires that at a minimum compliance with this objective shall be evaluated with a 96-hour bioassay. This Order requires annual acute toxicity testing that implements requirements of the Basin Plan.
2. *Chronic Toxicity*- Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Therefore, in accordance with the SIP, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary.

D. Receiving Water Monitoring

1. Surface Water

This Order continues the receiving water monitoring established by previous Order No. 98-123's Monitoring and Reporting Program except for the following:

- a. Receiving water monitoring is included to determine the impacts of the discharge on the receiving water, and also to determine compliance with receiving water limitations. Table F-7 summarizes the additional receiving water monitoring required by this Order to determine whether the discharge is causing an instream exceedance of applicable water quality objectives.

**Table F-7.
Summary of Additional Receiving Water Monitoring**

Parameter(s)	Monitoring Frequency	Rational
Antimony, Arsenic, Copper	Quarterly	Monitoring assigned to determine whether the discharge is causing an instream exceedance of applicable water quality objectives.
Barium	Quarterly	
Iron, Manganese	Quarterly	
Chloride, TDS	Quarterly	
Aluminum	Quarterly	
Ammonia	Quarterly	

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

Section 1.3 of the SIP requires the Regional Board to require periodic monitoring for pollutants, at least once prior to the reissuance of a permit, for which criteria or objectives apply and for which no effluent limitations have been established. To comply with the SIP, this Order requires the Discharger to sample effluent and upstream receiving water for priority pollutants at least once during this permit term and the sample shall be collected no more than 365 days and no less than 180 days prior to expiration of this Order.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions.

Standard Provisions, which in accordance with 40 CFR 122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

2. Regional Board Standard Provisions.

The Discharger is required to comply with applicable Regional Board Standard Provisions VI.A.2.

B. Monitoring and Reporting Program Requirements

Pursuant to the requirements of Sections 13267 and 13383 of the California Water Code the Discharger is required comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Re-Opener Provisions

- a. **Provision VI.C.1.a, Re-Opener Provision.** Provision VI.C.1.a allows the Regional Board to re-open this Order to include any newly adopted receiving water standards.
- b. **Provision VI.C.1.b, Dissolved Oxygen TMDL Re-Opener Provision.** Upon adoption of a DO TMDL for the Stockton DWSC, this Order may be reopened to consider alternate effluent limitations (including but not limited to: DO, COD, ammonia, and TSS) needed to allow the Discharger to meet it's required load allocation that may be specified in the TMDL.

- c. **Provision VI.C.1.c, Mercury TMDL Re-Opener Provision.** The mercury TMDL completion date is anticipated to be in 2005. This Order may be reopened to consider alternative effluent limitations needed to allow the Discharger to meet its required load allocation that may be specified in the TMDL.
- d. **Provision VI.C.1.d, Studies/Monitoring Re-Opener Provision.** This provision allows the Regional Board to reopen this Order if review of the study results specified in Section VI.C.2.a of this Order or any effluent monitoring show that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.
- e. **Provision VI.C.1.e, Chronic Toxicity Re-Opener Provision.** If the chronic toxicity testing specified in Section VI.C.2.b indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, this Order shall be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.
- f. **Provision VI.C.1.f, Optional Translator Study Re-Opener Provision.** Discharger effluent and receiving water data for barium, iron, and manganese are expressed as total recoverable. The need for dissolved barium, iron, and manganese effluent limitations based on Basin Plan Trace Element objectives (expressed as dissolved fractions) for Delta waters were evaluated by applying a default translator of 1. If the Discharger elects to conduct a translator study, the Regional Board would consider the information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objectives; and if necessary this Order may be reopened to revise existing requirements for barium, iron, or manganese.
- g. **Provision VI.C.1.g, Optional Dilution Study Re-Opener Provision.** If the Discharger elects to conduct a dilution study, the Regional Board would consider the information in re-evaluating applicable effluent limitations and other requirements established in this Order; and if necessary this Order may be reopened to revise existing requirements.
- h. **Provision VI.C.1.h, Interim Mercury Mass Limitation Report Re-Opener Provision.** Upon completion of the *Interim Mercury Mass Limitation Report* required by this Order, this Order shall be reopened and an interim performance based mercury mass effluent limitation established.

2. Special Studies and Additional Monitoring Requirements

- a. **Provision VI.C.2.a, Priority Pollutant Monitoring.** According to Section 1.2 of the SIP, the Discharger must report data for all the priority pollutants listed in the CTR. The data are used to determine reasonable potential for these constituents to cause or contribute to an exceedance of applicable water quality criteria and to calculate effluent limitations. The Discharger was directed under Section 13267 of the California Water Code to conduct a receiving water and effluent monitoring study in accordance with the SIP. The Discharger submitted most of the required monitoring data, but did not submit any data for Benzo(b)Fluoranthene, Hexachlorobutadiene, and N-Nitrosodimethylamine. This provision requires the Discharger to sample the effluent and receiving water for these constituents and submit the results to the Regional Board.
- b. **Provision VI.C.2.b, Toxicity Studies.** This provision is based on Section 4 of the SIP. It requires the discharger to conduct additional studies and workplans to evaluate toxicity in the discharge and eventually reduce that toxicity (Toxicity Identification Evaluation (TIE) and Toxicity Reduction Evaluation (TRE)) if chronic toxicity monitoring indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity.

- c. **Provision VI.C.2.c, Interim Mercury Mass Limitation Report.** To determine an interim performance based mass limitation for mercury, the Discharger is required submit within eighteen (18) months of adoption of this Order an *Interim Mercury Mass Limitation Report* which summarizes flow and effluent mercury data collected pursuant to Attachment E, Monitoring and Reporting Program, of this Order.

3. Best Management Practices and Pollution Prevention

Stormwater Requirements. Storm water discharges from the Facility are not required to be regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001) because residual mining material is not exposed to stormwater.

4. Compliance Schedules – Not Applicable

5. Construction, Operation, and Maintenance Specifications – Not Applicable

6. Special Provisions for Municipal Facilities – Not Applicable

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Oakwood Lake Subdivision Mining Reclamation Project. As a step in the WDR adoption process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Board has notified the permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the issuance of Tentative Orders on 7 September 2005.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative Orders. Comments should be submitted either in person or by mail to the Executive Office at the Regional Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on 13 October 2005.

C. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **20 and 21 October 2005**
Time: **8:30 a.m.**
Location: **Central Valley Region**
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is <http://www.waterboards.ca.gov/centralvalley/> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Board by calling (916) 464-4645.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Jon Ericson at (916) 464-4660.